



## **WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** HI2082

**Title:** Confirming the Natural Presence of Fecal Indicator Bacteria in Environmental Soil and Water on the Islands of Kauai and Hawaii.

**Focus Categories:** Water Quality, Water Use

**Keywords:** Health Effects, Tropical Environment, Water Quality Standards, Fecal Indicator Bacteria

**Start Date:** 03/01/2001

**End Date:** 02/28/2002

**Federal Funds:** \$23,209

**Non-Federal Matching Funds:** \$47,930

**Congressional District:** First

**Principal Investigator:**

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**Abstract**

USEPA has established recreational water quality standards based on concentrations of fecal indicator bacteria (fecal coliform, *E. coli*, enterococci) and assumes that the source of these fecal bacteria is feces of man, animals and sewage. In the interpretation of these water quality standards, USEPA assumes that there are no significant environmental sources of these fecal indicator. However, this assumption is not applicable in Hawaii because these fecal indicator bacteria are naturally present in the soil environment and this environmental source has been shown to be responsible for the monitoring data that all streams on Oahu exceed the water quality standard of 33 enterococci/100 ml and 126 *E. coli*/100 ml. In Hawaii, the high concentrations of fecal indicator bacteria in the streams represent an environmental (soil) source of contamination rather than fecal contamination. These data were collected on the island of Oahu and the results are extrapolated to all the other islands in the state of Hawaii. However, due to drastic differences in the age, geology, soil, characteristics and rainfall patterns in the different islands of Hawaii, the data collected from the island of Oahu must be confirmed to occur on all of the islands. The goal of this study is to monitor for the presence of fecal indicator bacteria in the stream, soil, coastal water and groundwater sites on the oldest island (Kauai) and the youngest island (Hawaii) and to compare the results with those obtained from the island of Oahu. These kinds of data are required before conclusions applicable to the entire state of Hawaii can be made with confidence.